

Statement of Captain Roy Mathur

California Department of Fish and Game,
OSPR

Departure YBI to mv Cosco Busan at Anchorage

The OSPR investigation team consisted of Warden Todd Ajari (OSPR), Warden Will O'Brien (OSPR), Capt. Roy M. Mathur (OSPR) and PO Mr. Martin (USCG).

Boarding the mv Cosco Busan

We boarded the *mv Cosco Busan* at 1248 on Wednesday, November 07, 2007 and after checking in with the gangway watch, proceeded directly up to the bridge of the vessel in order to interview the **MASTER** of the vessel; Captain Sun Mao Cai (herein referred to as "**MASTER**")

OSPR investigation team was accompanied to the master's cabin where the **MASTER** seated us in his day room. After formal introductions and exchange of business cards, we made it clear to the master that we were here to inquire into the cause of the incident and to quantify the oil spilled from the vessel into the San Francisco Bay waters. The **MASTER** indicated that he understood clearly, what was said.

NOTE: Captain Sun Mao Cai is of Chinese (Main land) origin and his spoken English language and diction is heavily accented. However, I had little problem understanding his language, terminology and diction. At times when I was unclear as to his choice and use of English language, words, pronunciation, context or the diction of a word, I asked him to repeat himself until we both understood the context and his explanation clearly.

At the time of our boarding, there was a team of investigating officers from the USCG on board the vessel. However, the team did not join our investigation and were called away from the vessel to attend to other duties shortly after the OSPR investigation team boarded the vessel.

Initial inquiry into the allision of mv Cosco Busan

I spoke with the **MASTER** and commenced the interview as to the cause of the allision of the *mv Cosco Busan* with the San Francisco Bay Bridge.

Seating arrangement in Captains cabin on mv Cosco Busan

We were seated in the captain's day room in a semi-circular fashion. The **MASTER** of the *mv Cosco Busan* stated what transpired right from the time of arrival of the vessel to Oakland, the previous evening at the Hanjin Berth-56.

Arrival from sea to Hanjin Berth - 56, Oakland, the previous day at 1748

The **MASTER** stated that *mv Cosco Busan* had arrived at Oakland the previous evening and made fast starboard side alongside and loaded / discharged containers with 3 stevedore gangs all night. The night shift was completed at 0400 without incident and the sailing for the outbound passage to sea was set for 0700 on the morning of Wednesday, November 07, 2007.

The Chief Mate of the vessel was in charge of cargo operations and the 2nd and 3rd mates assisted him on cargo watch through the night.

I inquired if he (**MASTER**) had sufficient rest through the night in order to be fresh to set sail the following morning. The **MASTER** answered in the affirmative. I asked him if he maintained a rest log as required by law and again, the **MASTER** answered in the affirmative.

The morning of Wednesday, November, 07, 2007

At this point I asked the **MASTER** to tell me in his own words what happened from the time the engines were put on Stand-by Engines (SBE).

The **MASTER** stated that the Pilot, Captain John Joseph Cota (herein referred to as "**PILOT**") boarded the vessel at 0620 on the morning of Wed, Nov 07, 2007. The engines and controls of the vessel were tested at 0620 and logged as such. Stand-by Engines to the Engine room were given at 0630 and logged as such in the Maneuvering Order Book.

The **MASTER** stated that the Pilot boarded the *mv Cosco Busan* and arrived on the bridge directly. After introducing himself to the **MASTER**, they exchanged information available on the vessels 'Pilot Card' briefly. The **PILOT** signed and returned the Pilot Card to the **MASTER**.

I asked the **MASTER** whether the Pilot-Master interchange was completed with a detailed discussion of the outbound Passage Plan. The **MASTER** answered that the Pilot-Master discussion on the Pilot Card was brief.

The **MASTER** stated that all bridge controls were tested and found satisfactory. The **PILOT** and **MASTER** remained on the bridge and the **PILOT** was tuning the radars to his satisfaction and acquainting himself with the layout of the bridge. The **MASTER** stated that he could hear the **PILOT** conversing with 'Vessel Traffic Service' (VTS) about passing traffic on the VHF.

NOTE: The **PILOT** informed the **MASTER** that he was waiting for passing traffic to clear and as soon as the passing traffic all clear, he would commence the transit of *mv Cosco Busan*. The **MASTER** stated that during the almost hour-long wait before departure, the **PILOT** familiarized himself with the layout of the bridge and the navigational equipment.

At this time, I asked the **MASTER** of other personnel present on the bridge of the vessel and he stated that he had a helmsman (Able Bodied Seaman) on the wheel and the 3rd mate on the bridge during departure stations. I asked if the wheel was put on 'auto pilot' at any point of the harbor steaming. The **MASTER** replied in the negative.

The declared draft of mv Cosco Busan was:

Forward draft : 12.12 meters (39' 09")
After draft : 12.23 meters (40' 01")

I asked the **MASTER** if the propeller of the vessel was fully submerged at the current draft. He answered in the affirmative.

The **MASTER** stated that both the radars and the ECDIS were operational and switched on ready for use at the time of Pilot on board.

The **MASTER** stated that the **PILOT** looked at the *ECDIS* monitor during the initial wait before casting off and casually asked the **MASTER** about the marks on the span of the Bay Bridge.

"Center of the Bay Bridge" and "Center of the Span 'D-E' of the Bay Bridge"

At this point, the **MASTER** drew a freehand drawing of the Bay Bridge relative to Berth-52 at Oakland, on a piece of paper and showed me clearly that the 2 Racon markers were located on the mid-spans of the San Francisco Bay Bridge.

He showed me that the first Racon marker was located at the center of the span 'C-D' and the second Racon was located between the center of span for the 'D-E' of the San Francisco Bay Bridge.

He continued the free hand drawing and drew the intended course of the vessel aiming for the 'Y' Racon located at the center of the 'D-E' span of the San Francisco Bay Bridge. As per the passage plan of the vessel, the *mv Cosco Busan* intended to pass directly under and between the 'D-E' span of the Bay Bridge.

The **MASTER** carefully explained to me that the vessel should have aimed for the Racon marker 'Y' that marked the center of the 'D-E' span of the San Francisco Bay Bridge.

The **MASTER** was clear about the Recons and even indicated that the Racon on the 'D-E' span was clearly visible on both the radars and painted as 'Y' (dash-dash-dot) on the radar screens.

On the same free hand drawing, I noticed the **MASTER** drew the 2 red marker buoys as they appeared on the *ECDIS* rather close to the 'D' tower of the Bay Bridge.

The **MASTER** showed me that there were as the 2 red marks as they appeared on the *ECDIS*. He stated that earlier the same morning, before departure, the 2 Red marks on the *ECDIS* were a point of conversation between the **PILOT** and himself. The **PILOT** asked the **MASTER** if the 2 red buoys represented the 'center' of the Bay Bridge. The **MASTER** agreed that the 2 red buoys located close to the 'D' tower were indeed the center of the Bay Bridge and answered in the affirmative.

At this point, the **MASTER** clarified that the 2 red buoys were the center of the San Francisco Bay Bridge but not the 'center of the D-E span' of the San Francisco Bay Bridge.

On the same piece of paper, the **MASTER** then pointed out the Racon marker 'Y' located between the 'D-E' span indicated the center of the 'D-E' span of the San Francisco Bay Bridge.

Later, on the bridge, the **MASTER** pointed out the exact location of the two Racon markers on the ARPA, *ECDIS* as well as the paper chart.

NOTE: At this point of investigation, the **MASTER** appeared to be confident that the Racon 'Y' was the center of the span 'D-E' of the Bay Bridge but appeared unsure of the question posed earlier by the **PILOT** about the 2 red buoys also being the center of the San Francisco Bay Bridge span.

Although it was easy to see that, the location of the 2 red buoys located near the 'D' Tower of the San Francisco Bay Bridge and the Racon 'Y' are located fairly far apart, there could be little confusion as to the center of the D-E span of the San Francisco Bay Bridge and the center of the San Francisco Bay Bridge itself.

- The Racon 'Y' marks the center of the D-E span of the Bay Bridge.
- The 2 red 'preferred channel to port' buoys indicate safe passage on the port side thus keeping all passing traffic away from the 'D' Tower of the Bay Bridge.

From the **PILOTS** conversation and exchange of information, the **MASTER** understood the 2 red preferred channel to port marker buoys to represent the "center of the San Francisco Bay Bridge" and the Racon 'Y' to represent the "center of the 'D-E' span of the San Francisco Bay Bridge".

The 2 buoys located closer to the 'D' in question appear conspicuous and bright red in color on the *ECDIS* monitor and also appear stationed close to the 'D' tower of the San Francisco Bay Bridge.

NOTE: I remember pausing for a few moments and then I asked the **MASTER** why any **BAR PILOT** who has navigated the San Francisco Bay waters for years would ask a **MASTER** of any visiting vessel whether the 'preferred channel markers to port' represented the center of the San Francisco Bay Bridge.

The **PILOT** would obviously be intimately familiar with position and marks of the 'preferred channel' marker buoys located near the 'D' span of the San Francisco Bay Bridge. Additionally, the confusion could be allayed quite easily by referring to the paper chart and identifying the same 'preferred channel marker to port' buoys located near the 'D' Tower of the San Francisco Bay Bridge. The 2 red conspicuous buoys on the *ECDIS* are the very same buoys clearly marked on the paper chart. The **MASTER** expressed complete dismay and plainly stated plainly, 'I don't know'.

At this point I continued with other aspects of the outbound voyage to sea of the *mv Cosco Busan*.

NOTE: The **MASTER** stated that due to thick fog, the visibility was poor and from the conning position on the Bridge of his vessel, he could barely see the beginning of the second Bay of containers on the main deck.

I asked the **MASTER** if the visibility was approximately 60 feet or so since each Bay on a container vessel measures 45 feet. The **MASTER** answered in the affirmative.

At this point I asked the **MASTER** if there was any conversation with the **PILOT** about commencing his voyage in thick fog and restricted visibility. The **MASTER** did not state that he had an explicit conversation about commencing the voyage in fog and restricted visibility.

The **MASTER** continued and stated that a tug was made fast with one line to his port quarter before unberthing operations. After casting off all lines at Oakland, Hanjin Berth - 56, the tug was moved from the port quarter to the center lead aft of the vessel with a single line.

At this point I asked the **MASTER** to relate in his own words, the passage from Oakland, Hanjin B-56 to sea till the time of allision with the 'D' tower of the San Francisco Bay Bridge.

The **MASTER** stated that the vessel cast off all mooring lines at 0748. The vessel *mv Cosco Busan* proceeded under her own power unassisted by the

aft tug through the deep-water buoy channel on her outbound passage to sea.

The 2 red marks near the 'D' span of the Bay Bridge

At this point the **MASTER** drew the vessel track line of the vessel and also the intended course of the vessel on a blank piece of paper. The **MASTER** then drew the 'C' and 'D' towers of the Bay Bridge and also the 2 red buoys close to the 'D' tower of the Bay Bridge. He then proceeded to explained what the courses and speeds of the vessel were during transit towards the San Francisco Bay Bridge.

Passage Plan for departure Oakland

I asked the **MASTER** in passing if he had a completed Passage Plan for departure Oakland. The **MASTER** answered in the affirmative.

Paper Chart

At this point I asked the **MASTER** if anyone paid any attention to the paper chart on the Navigation table and the **MASTER** indicated that no one paid any attention to the paper chart or the courses drawn on it. Later, I glanced at the chart on the bridge and saw no outbound fixes on the paper chart.

The mv Cosco Busan in transit

The **MASTER** stated that as the vessel cleared the Oakland estuary, the **PILOT** gave orders to increase the speed of the vessel rapidly. The visibility was still severely restricted due to thick fog.

At this time, the vessel was transiting the deep-water buoy channel and the **MASTER** could visually see buoys # 7 and # 6 on either side of the vessel only as they passed the beam of the vessel.

As the vessel approached the end of the deep water buoy channel, the **MASTER** stated that the **PILOT** gave a broad port helm. The **MASTER** stated that the vessels speed was increased and both he and the **PILOT** were navigating with the help of Radar and the *ECDIS* due to restricted visibility and foggy conditions.

I asked the **MASTER** if he had lookouts posted, he answered in the affirmative saying that the Chief Mate and Bosun were posted on the fore castle deck of the vessel as lookouts. The Chief Mate on the Bow of the vessel had a hand radio with which he communicated with the **MASTER** directly on the bridge.

At this point, I asked the **MASTER** what he thought the speed of the vessel was and he stated that it was between 12 to 14 knots. I asked him how did he determine the Speed Over Ground of the vessel during the passage and he stated that he looked at the speed indicator on the ARPA and noticed the electronic speed display read 12-14 knots.

I expressed surprise at the fast speed of the vessel during this early stage of transit of the vessel and the **MASTER** at this point exclaimed 'Why so fast'?

The **MASTER** continued that the vessel was proceeding on a WSW course and there was no crossing or on-coming traffic towards the *mv Cosco Busan*.

At this point the **MASTER** stated that the Chief Mate on the Bow of the vessel called the **MASTER** on the hand radio and informed him that he could see a tower of the Bay Bridge directly ahead of him at a distance of approximately 100 meters.

At this point the **MASTER** stated that the **PILOT** gave a hard over movement to starboard in order to avoid alliding with the Bay Bridge tower head on.

0830 – Wed, Nov 07, 2007 - Allision with 'D' tower of the Bay Bridge

The **MASTER** stated that vessel missed alliding with the 'D' Tower of the San Francisco Bay Bridge head on and glanced off the fendering system of the 'D' Tower of the San Francisco Bay Bridge on the port side of the vessel.

At this time of the allision, the **PILOT** gave a hard over helm to port in order to swing the stern away from the 'D' tower of the San Francisco Bay Bridge in order to prevent further damage to the vessel and Tower.

NOTE: Both the lookouts on the fore castle deck, Chief Mate and the Bosun reportedly ran aft and sheltered themselves behind the starboard windlass in case the vessel suffered a head on collision.

As soon as the **MASTER** saw the close quarter situation, he ran out to the port wing on the bridge of the vessel to see visually, if the vessel would clear the clear the 'D' tower of the San Francisco Bay Bridge. The **PILOT** remained on the conning position of the bridge at the time of allision.

The Allison occurred at 0830.

Immediately after the allision with the 'D' tower of the San Francisco Bay Bridge, reportedly, the Chief Mate and Bosun leaned over the port side on the fore castle deck and noticed bunker fuel oil pouring out from the port side wing tanks of the vessel. Reportedly, they called the bridge on the hand radio

immediately and informed the **MASTER** of the oil spill from the ruptured fuel oil tanks.

The **MASTER** called the Chief Engineer on the bridge telephone and informed him that the vessel had made contact with the San Francisco Bay Bridge. The port fuel oil wing tanks had been holed and were leaking oil into the San Francisco Bay. The **MASTER** asked the Chief Engineer to take tank soundings immediately and determine which tanks had been compromised.

NOTE: At this time I did not ask the quantity of oil estimated leaked from the vessel into the water and the **MASTER** did not volunteer the information either. The OSPR investigation team intended to gauge and calculate the oil spill figures shortly thereafter.

Called for Chief Mate and the Bosun on the bridge

At this point of the interview with the **MASTER** I called for the Chief Mate and the Bosun for questioning. I asked both the gentlemen at what distance did they notice the tower of the Bay Bridge. The Bosun stated that at approximately 100 meters; he noticed a tower of the San Francisco Bay Bridge directly ahead of him. The Bosun stated that he called the **MASTER** on the bridge immediately over the hand radio and informed him of the impending danger of the tower dead ahead.

Post allision with the Bay Bridge

The **MASTER** stated that the **PILOT** slowed the vessel down to a stop on the west of Yerba Buena Island and was relieved by two Pilots. The relieving pilot was Capt. A. Hoburg who guided the vessel to Anchorage 7 at first and then later taking into consideration the deep draft of the vessel, moved the vessel to Anchorage 9. The vessel was safely anchored at Anchorage 9 with 6 shackles in the water.

At this point I asked the **MASTER** again to confirm what he thought the speed of the vessel was shortly before the allision with the Bay Bridge Tower. The **MASTER** stated that the speed of the vessel was 12-14 knots at this time of the allision. Again, at this point I asked the **MASTER** if there was any change in visibility and foggy conditions. The **MASTER** stated that there was no change in foggy conditions and the vessel was maneuvering in severely restricted visibility.

Recap by **MASTER** on where the error or errors made in navigation leading to the allision.

Towards the end of the interview, I asked the **MASTER** to recap and determine in his view where the error or rather, a combination of errors made

that led to the allision of the mv Cosco Busan with the San Francisco Bay Bridge.

- The **MASTER** pointed out the initial broad port helm just outside the deep water buoy channel was the first error. The **PILOT** failed to correct the course of the vessel and drifted too far to the port side of the outbound channel.
- Second, the speed of the vessel was excessive. As per the **MASTER**, he emphatically stated that 12-14 knots was too fast in restricted visibility with fog considering the close range of the vessel from the San Francisco Bay Bridge.
- Third, the **PILOT** did not realize that the vessel was so close to the Bridge Tower until the lookouts on the bow raised the alarm and informed the **MASTER** that the tower of the Bay Bridge was dead ahead at a distance of less than 300 feet from the bow of the vessel.

OSPR investigation team moved from the MASTERS cabin to the bridge of the mv Cosco Busan

At this time we moved from the **MASTERS** cabin to the bridge of the vessel for a quick look at the instrumentation and layout of the bridge.

An inspection of the Bridge of the mv Cosco Busan

A survey of the bridge navigational aids and instrumentation on the bridge of *mv Cosco Busan* revealed that all the instrumentation was on, still running and operational. I tested the 2 radars and compared the VRM with the range lines in order to do a quick distance check. The radars appeared to be functioning as expected.

I and asked the **MASTER** where Racon 'Y' was on the radar screen as he described it earlier. The 'Y' Racon marked the center of the 'D-C' span of the Bay Bridge. The **MASTER** pointed out exact location of the 'Y' Racon on the radar and showed me that the Racon painted dash-dash-dot on the radar screen.

The *ECDIS* was on and operational. The **MASTER** showed me the 'preferred channel to port' marker buoys as they appeared in red color on the *ECDIS*.

The OSPR investigation team looked closely at the paper chart (BA 855) and noticed the chart had been recently corrected and appeared up to date. I looked at the course recorder and noticed that it was on and running. I moved the steering wheel port and starboard in order to see the rudder angle indicator repeat the same movement given on the helm.

The OSPR investigation team noticed there were no outbound fixes marked on the paper chart and no signs of ship position fixing by the prescribed method of parallel indexing as described in the passage plan.

Gauging of Tanks and Measurement of tank soundings

We concluded the first part of the interview and departed the bridge accompanied with the Chief Engineer and two Oilers in order to commence gauging of all compromised bunker tanks.

The next hour was spent in taking soundings from:

1. Tank # 3 Port - FOT (electronic gauge)
2. Tank # 4 Port - FOT (tape sounding)
3. DB - FOT - (tape sounding)

Samples were drawn from Tanks:

- a). #3 Port Fuel Oil Tank
- b). # 4 Port Fuel Oil Tank
- c). Double Bottom Fuel Oil Tank

NOTE: The sounding pipe of Tank # 3 Port FOT was badly damaged and mangled and we were unable to pass the sounding tape through the sounding pipe. The manhole cover was damaged and there was no way of dipping a sounding tape into the tank. We were forced to take the electronic read-out for Tank # 3 Port located in the in the Ballast Water control room in order to quantify the quantity of bunker fuel remaining in the tank.

After completion of soundings and calculations, the Chief Engineer, a surveyor from Hull and Machinery, Mr. Arthur Waddington and I concluded that 219.63 cubic meters of Bunker Fuel Oil (58,020 gallons) had leaked out from Tank # 3 and # 4 Port into the San Francisco Bay

The calculations were made carefully in order to determine the quantity of oil spilled into the San Francisco Bay and to mount an oil spill clean-up operation in the San Francisco Bay as soon as possible.

Oil spilled from Fuel Oil Tank's 3 & 4 Port:

Gallons	= 58,020.107
Cubic Meters	= 219.63
Barrels	= 1,841.908

After completion of calculations of fuel oil spilled from mv Cosco Busan the OSPR investigation team moved back to the bridge of the mv Cosco Busan

After completing the calculations, the OSPR investigation team went back to the bridge of the vessel and informed the **MASTER** of the spilled quantity. The **MASTER** and Chief Engineer of the vessel did not express any surprised with the spilled quantity figures and appeared to be comfortable with the final figure. I informed the **MASTER** that I would be back the following day to gauge all the fuel oil tanks of the *mv Cosco Busan* in order to arrive at exact figures of Reserves on Board (ROB).

Waiting for transportation back to shore from mv Cosco Busan

While waiting for the transportation back from the vessel, the OSPR investigation team returned to the bridge of the vessel and inspected other instrumentation on the bridge and the Safety Management Systems practiced on the vessel.

The maneuvering characteristics are conspicuously displayed on the bridge of the vessel with maneuvering RPM and speed clearly visible from the conning position on the bridge.

Maneuvering Engine Order	RPM	Speed	
		<i>Loaded</i>	<i>Ballast</i>
Full Ahead	65	17	18
Half Ahead	50	13	14
Slow Ahead	35	9	10
Dead Slow Ahead	24	6	7

The OSPR investigation team asked the **MASTER** for a photocopy of several documents including the Vessels Particulars, course recorder and Maneuvering Order book. The **MASTER** readily complied and gave us photocopies of the same.

At 1630, the transportation arrived and we disembarked the *mv Cosco Busan* for Yerba Buena Island, USCG, Unified Command Center.

We arrived at the UC Center shortly before 1700 on Wednesday, November 07, 2007.